

CLAIMS

We Claim:

- 1 1. A method of calculating a time value for a frame of data to be transmitted
2 comprising the steps of:
 - 3 a. transmitting a previous frame a number of frames before the frame of data to
4 be transmitted;
 - 5 b. obtaining a time stamp value from the previous frame; and
 - 6 c. determining the time value using the time stamp value.
- 1 2. The method as claimed in claim 1 wherein the step of determining the time
2 value is completed by adding a value representing a time for transmission of the number of
3 frames to the time stamp value.
- 1 3. The method as claimed in claim 1 further comprising the step of inserting the
2 time value into the frame of data to be transmitted.
- 1 4. The method as claimed in claim 3 wherein the time value is inserted into a first
2 packet of the frame of data to be transmitted.
- 1 5. The method as claimed in claim 1 wherein the number of frames is equal to
2 four.
- 1 6. The method as claimed in claim 1 wherein the previous frame is a dummy
2 frame.

1 7. The method as claimed in claim 1 wherein the time value is a presentation time
2 value.

1 8. A method of transmitting a stream of data including a plurality of packets
2 comprising the steps of:

- 3 a. calculating a time value for a packet to be transmitted within the stream of data
4 by transmitting a previous packet, obtaining a time stamp value from the
5 previous packet and determining the time value using the time stamp value; and
6 b. inserting the time value into the packet to be transmitted.

1 9. The method as claimed in claim 8 wherein the step of calculating a time value
2 is completed by adding the time stamp value of the previous packet to a value representing a
3 time of transmission for a number of packets between the previous packet and the packet to
4 be transmitted.

1 10. The method as claimed in claim 9 wherein the packet to be transmitted is part
2 of a video frame.

1 11. The method as claimed in claim 10 wherein the packet to be transmitted is a
2 first packet within the video frame.

1 12. A method of transmitting a stream of data including a plurality of packets
2 comprising the steps of:

- 3 a. transmitting one or more dummy packets from a transmitting node, wherein
4 each of the dummy packets has an associated time stamp value representing a
5 current time at which a corresponding dummy packet is transmitted;

- 6 b. calculating a time value for a packet to be transmitted after the dummy packets
7 using a time stamp value from a previously transmitted packet which is a
8 number of packets before the packet to be transmitted within the stream of
9 data;
10 c. inserting the time value into the packet to be transmitted; and
11 d. transmitting the packet to be transmitted from the transmitting node to a
12 receiving node.

1 13. The method as claimed in claim 12 wherein the packets within the stream of
2 data are grouped into one or more frames.

1 14. The method as claimed in claim 13 wherein the steps of b-d are repeated for a
2 first packet within each frame.

1 15. The method as claimed in claim 14 wherein the step of calculating a time value
2 is completed by adding a value representing a time for transmission of the number of packets
3 between the previously transmitted packet and the packet to be transmitted to the time stamp
4 value from the previously transmitted packet.

1 16. The method as claimed in claim 15 wherein the time value is a presentation
2 time value.

1 17. The method as claimed in claim 16 wherein the stream of data is isochronous
2 data.

1 18. The method as claimed in claim 17 wherein the transmitting node and a
2 receiving node are coupled together by an IEEE 1394-1995 serial bus network.

1 19. The method as claimed in claim 18 wherein the time value is inserted into an
2 SYT field within a CIP header of the packet.

1 20. An apparatus for transmitting a stream of data including a plurality of packets
2 comprising:

- 3 a. a transmitting circuit for transmitting a plurality of packets within the stream of
4 data from a transmitting node to a receiving node, wherein each of the packets
5 has an associated time stamp value representing a current time at which the
6 packet is transmitted; and
7 b. a control application for obtaining the time stamp value from a previous packet,
8 calculating a time value for a packet to be transmitted a number of packets
9 after the previous packet using the obtained time stamp value and inserting the
10 time value into the packet to be transmitted before the packet to be transmitted
11 is transmitted.

1 21. The apparatus as claimed in claim 20 wherein the transmitting circuit also
2 transmits the packet to be transmitted after the time value is inserted into the packet by the
3 control application.

1 22. The apparatus as claimed in claim 21 wherein the time value is a presentation
2 value and is calculated by adding a value representing a time for transmission of the number
3 of packets between the previous packet and the packet to be transmitted to the obtained time
4 stamp value.

1 23. The apparatus as claimed in claim 22 wherein the packets within the stream of
2 data are grouped into one or more frames.

1 24. The apparatus as claimed in claim 23 wherein the control application only
2 calculates the time value for a first packet of each frame.

1 25. The apparatus as claimed in claim 23 wherein the stream of data is isochronous
2 data.

1 26. The apparatus as claimed in claim 25 wherein the transmitting node and the
2 receiving node are coupled together by an IEEE 1394-1995 serial bus network.

1 27. The apparatus as claimed in claim 26 wherein the time value is inserted into an
2 SYT field within a CIP header of the packet to be transmitted.

1 28. A method of transmitting an isochronous stream of data from a transmitting
2 node to a receiving node over an IEEE 1394-1995 serial bus structure, the isochronous stream
3 of data including a plurality of packets grouped into one or more frames comprising the steps
4 of:

- 5 a. transmitting one or more dummy packets from the transmitting node to the
6 receiving node, wherein each of the dummy packets has an associated time
7 stamp value representing a current time at which a corresponding dummy
8 packet is transmitted;
- 9 b. calculating a time value for a packet to be transmitted after the dummy packets
10 using a time stamp value from a previously transmitted packet which is a
11 number of packets before the packet to be transmitted within the stream of
12 data;
- 13 c. inserting the time value into the packet to be transmitted;
- 14 d. transmitting the packet to be transmitted from the transmitting node to the
15 receiving node; and

16 e. repeating steps b-d for a first packet within each frame within the stream of
17 data.

1 29. The method as claimed in claim 28 wherein the step of calculating a time value
2 is completed by adding a value representing a time for transmission of the number of packets
3 between the previously transmitted packet and the packet to be transmitted to the time stamp
4 value from the previously transmitted packet.

1 30. The method as claimed in claim 29 wherein the time value is inserted into an
2 SYT field within a CIP header of the packet to be transmitted.